

METHOD TO FABRICATE SiGe HBTs WITH CONTROLLED CURRENT GAIN AND IMPROVED BREAKDOWN VOLTAGE CHARACTERISTICS

ABSTRACT OF THE DISCLOSURE

- 5 A method of fabricating a SiGe heterojunction bipolar transistor (HBT) is provided which results in a SiGe HBT that has a controllable current gain and improved breakdown voltage. The SiGe HBT having these characteristics is fabricated by forming an in-situ P-doped emitter layer atop a patterned SiGe base structure. The in-situ P-doped emitter layer is a bilayer of in-situ P-doped a:Si and in-situ P-doped polysilicon.
- 10 The SiGe HBT structure including the above mentioned bilayer emitter is also described herein.